

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the flexible cable, the field control and the first and second plurality of strands and the transmission line must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 7, 10, 25, 36, 39 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The flexible cable in claims 7, 25, or 39, the first plurality of strands being insulated from each other and the second plurality of strands being uninsulated from each other in order to secure electric contact of claim 12, the field control in claim 36 and transmission line are not described in the specification.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2832

4. Claims 5, 7, 10, 12, 16, 25, 33, 36 and 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Throughout the claims, for example in claims 5, 31 and 33, the term "substantially" is a relative term, which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Regarding claims 7, 25 and 39, the structure of the flexible cable is unclear.

Regarding claim 12, the specific structure of the first plurality of strands being insulated from each other and the second plurality of strands being uninsulated from each other in order to secure electric contact is unclear.

Claim 16 lacks sufficient structural support for the functional language of "is air wound and formed without an iron core."

Regarding claim 34, applicant should clarify what specifically is intended by 100% overload.

Regarding claim 35, applicant should clarify what is intended by "free of sensible end winding loss."

Regarding claim 36, applicant should clarify what is intended by "free of partial discharge" and "field control."

Claim Rejections - 35 USC § 103

5. Claims 1- 6, 9-11, 13-15 and 17-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grimes et al. (Pat Num.5,455,551, herein referred to as Grimes et al.) in view of Elton et al.(Pat Num. 4,853,565, herein referred to as Elton).

The prior art of figure 1 and 2 discloses a transformer with windings 14, cooling ducts 22 and duct sticks (24, Figs. 1-2).

Grimes discloses the instant claimed invention except for the specific cable used for the windings.

Elton discloses the electric cable (Fig. 1-7) configured for use with electric device (Col. 1, line 15-25).

With respect to claims 1, 5-6, 11, 14-22, 25, 26-32, 37-38, Elton discloses an electric cable (100) comprising:

- an electrically conducting core (102, Fig.7);
- a plurality of electrically conducting strands (Col.7, lines 17-18) within the core, which may be used as a winding (Fig.5);
- an inner first semiconducting layer (104) surrounding and contacting the core (102):
- an insulating layer (106) arranged on an outside of the first semiconducting layer (104); and
- a second semiconducting layer (110) surrounding the insulating layer (106).

With respect to claims 3, 4, 13, Elton discloses a cable with a second layer comprises an equipotential surface surrounding the conductor (Col.7, line 24-

Art Unit: 2832

26), is connectable to earth potential (Col.7, line 26-27), and is void free (Col.8, line 3-9).

It would have been obvious to one having ordinary skill in the art at the same time the invention was made to use the cable of Elton in Grimes for the purpose of equalizing the electrical potential and minimize corona discharge.

With respect to claim 26 it would have been obvious the claimed product necessitates the claimed method steps.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grimes in view of Elton as applied to claims 1- 6, 9-11, 13-15 and 17-39 above, and further in view of Takaoka et al. (Pat Num. 5,094,703, herein referred to as Takaoka).

Grimes in view of Elton disclose the instant claimed invention except the specific size range for the cable.

Takaoka discloses a high-voltage cable having the specific size range diameter (Col.1, line 22-29).

Regarding claim 8, it would have been obvious to one having ordinary skill in the art at the same time the invention was made to modify the cable of Grimes in view of Elton to have a conductor area which is between about 30 and 3000 mm² and with an outer cable diameter which is between about 20 and 250 mm, as shown by Takaoka, for the purpose of increasing power handling capacity.

Art Unit: 2832

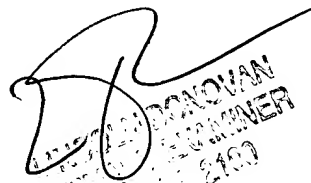
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh D. Nguyen whose telephone number is (703) 308-8505. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Gellner can be reached on (703) 308-1721. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-1341 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

November 22, 2000


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